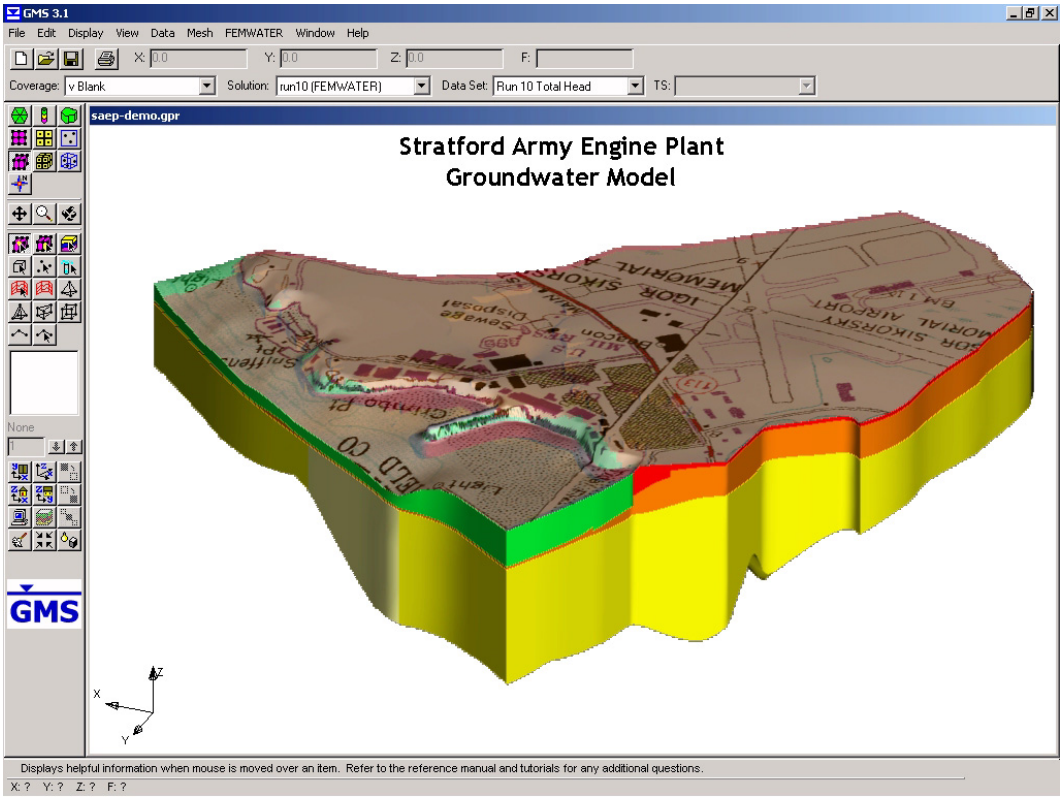
US Army Corps of Engineers®
Engineer Research and Development Center

# Department of Defense Groundwater Modeling System

## Technology

The Department of Defense (DoD) Groundwater Modeling System (GMS) is a comprehensive software package that helps expedite environmental cleanups. This comprehensive graphical subsurface modeling environment incorporates a suite of numerical modeling programs that allow civil engineers and others involved in hydrodynamic modeling to visualize the contaminated sites, evaluate cleanup alternatives, and predict their effectiveness. It provides tools for every phase of a groundwater simulation including site characterization, model development, post-processing, calibration, and visualization. GMS provides an integrated graphical environment for performing subsurface flow, contaminant fate/transport, and efficacy and design of remediation systems evaluation studies.




## Problem

Because of a lack of knowledge in the past to the dangers associated with the handling and disposal of certain chemical compounds, the U.S. Department of Defense has historically generated subsurface environmental problems. Cleanup of these problems could take decades with costs ranging into tens of billions of dollars.

**Expected Cost To Implement**

GMS is available at no cost to employees of the Department of Defense, the U.S. Environmental Protection Agency, the Department of Energy, the Nuclear Regulatory Commission, or onsite contractors to these agencies. Commercial use is available through Environmental Modeling Systems, Inc. GMS is available for Microsoft Windows-based operating systems.

**Benefits/Savings**

GMS integrates and simplifies the process of groundwater flow and transport modeling by bringing together all of the tools needed to complete a successful study. GMS provides a comprehensive graphical environment for numerical modeling and tools for site characterization, model conceptualization, mesh and grid generation, geostatistics, graphical visualization, and remedial alternative evaluation. Using GMS can save time and money, as much as 20 percent on overall project remediation costs.

**Status**

GMS is available for Microsoft Windows-based operating systems. It is compatible with any system that runs Windows 98, NT, ME, 2000, or XP. The current version of GMS provides a complete interface for the codes FEMWATER, MODFLOW2000, MODPATH, MT3DMS, RT3D, SEEP2D, NUFT3D, SEAM3D, and UTCHEM as well as the parameter estimation codes PEST and UCODE.

**ERDC POC**

Earl V. Edris, Jr., CEERD-HC-HG, e-mail: Earl.V.Edris@erdc.usace.army.mil
Phone: 601-634-3378.

**Distribution Sources**

GMS is distributed via Internet download, which includes the full program, tutorial files, documentation, and supported model executables. DoD/USEPA/DoE/NRC users may contact the U.S. Army Groundwater Modeling Technical Support Center, U.S. Army Engineer Research and Development Center, Vicksburg, MS 39180. Voice: 601-634-4286. FAX: 601-634-4208. e-mail: GMS@erdc.usace.army.mil, Home page: *http://chl.wes.army.mil/software/gms*. All other users may contact Environmental Modeling Systems, Inc. (EMS-I), 1204 W. South Jordan Parkway, Suite B, South Jordan, UT 84095-4600. Phone: 801-302-1400. FAX: 801-302-1160. e-mail: info@ems-i.com

**Available Documentation**

GMS Program, Tutorial Documentation, and Supported Model Documentation are provided with the "Full Install" download of the software.
*http://chl.wes.army.mil/software/gms/gmsdownload02*

**Available Training**

Inquiries by DoD/USEPA/DoE/NRC users can be directed to the U.S. Army Groundwater Modeling Technical Support Center, U.S. Army Engineer Research and Development Center, Vicksburg, MS 39180. Voice: 601-634-4286. FAX: 601-634-4208. e-mail: GMS@erdc.usace.army.mil Others can contact Environmental Modeling Systems, Inc. (EMS-I), which conducts GMS training courses on a continuing basis throughout the year. Inquiries can be directed to info@ems-i.com or call 801-302-1400. More information is available at *http://www.ems-i.com*.

**Available Support**

DoD/USEPA/DoE/NRC users may direct questions to the U.S. Army Groundwater Modeling Technical Support Center, U.S. Army Engineer Research and Development Center, Vicksburg, MS 39180. Voice: 601-634-4286. FAX: 601-634-4208. e-mail: GMS@erdc.usace.army.mil. More information is available at the CHL Home page: *http://chl.wes.army.mil/software/gms*. All other users may direct questions to Environmental Modeling Systems, Inc. (EMS-I), 1204 W. South Jordan Parkway, Suite B, South Jordan, UT 84095-4600. Phone: 801-302-1400. FAX: 801-302-1160. e-mail: info@ems-i.com. More information is available at the EMS Web site at *http://www.ems-i.com*.